

CLAIMS

We claim:

1. A passive energy saving system for a building comprising:

a heat exchanger;

a first reservoir including cooling water;

a first pipeline connecting the heat exchanger and the first reservoir for transferring the cooling water between the heat exchanger and the first reservoir;

a heat-absorbing board positioned in the building for absorbing air heat in the building by using a fluid; and

a second pipeline connecting the heat exchanger and the heat-absorbing board for transferring the fluid between the heat exchanger and the heat-absorbing board.

2. The passive energy saving system for a building of Claim 1, wherein the heat-absorbing board is positioned below the heat exchanger, and the heat exchanger is positioned below the first reservoir.

3. The passive energy saving system for a building of Claim 1, further comprising a cooling module positioned on a window of the building for cooling air entering the building.

4. The passive energy saving system for a building of Claim 3, wherein the cooling module is positioned below the heat-absorbing board.

5. The passive energy saving system for a building of Claim 3, wherein the cooling module comprises:

- a cooler for absorbing air heat entering the building; and
- a third pipeline connecting the heat-absorbing board and the cooler.

6. The passive energy saving system for a building of Claim 5, wherein the cooling module further comprises a photo catalyst filter and an active carbon filter for purifying air entering the building.

7. The passive energy saving system for a building of Claim 1, further comprising:

- a second reservoir positioned under the ground of the building; and
- a pump for transferring the cooling water from the second reservoir to the first reservoir.

8. The passive energy saving system for a building of Claim 7, further comprising a fourth pipeline connecting the second reservoir and the heat exchanger, wherein the pump transfers the cooling water from the second reservoir to the first reservoir through the fourth pipeline and the first pipeline.

9. The passive energy saving system for a building of Claim 1, further comprising an air circulation module, wherein the air circulation module comprises:

an air inlet positioned in the building;

an air outlet positioned in the building; and

a first heat-exchanging pipe positioned in the first reservoir and connecting the air inlet and the air outlet, wherein air in the building flows into the first heat-exchanging pipe through the air inlet by buoyancy, and flows into the building through the air outlet after being cooled by the cooling water in the first reservoir.

10. The passive energy saving system for a building of Claim 9, wherein the air circulation module further comprises an air purifier positioned between the air inlet and the first heat-exchanging pipe.

11. The passive energy saving system for a building of Claim 9, wherein the air circulation module further comprises a solar energy collector positioned between the air inlet and the first heat-exchanging pipe.

12. The passive energy saving system for a building of Claim 11, wherein the solar energy collector comprises:

a heat-absorbing plate; and

a plurality of helical coils connected to the heat-absorbing plate.

13. The passive energy saving system for a building of Claim 11, wherein the air circulation module further comprises:

a hot water tank positioned between the solar energy collector and the first heat-exchanging pipe; and

a second heat-exchanging pipe positioned in the hot water tank, wherein the second heat-exchanging pipe absorbs air heat heated by the solar energy collector so as to warm up water in the hot water tank.

14. The passive energy saving system for a building of Claim 11, wherein the air circulation module further comprises:

a first control valve positioned between the first reservoir and the solar energy collector;

a bypass pipeline positioned between the solar energy collector and the air outlet; and
a second control valve positioned on the bypass pipeline.

15. A passive energy saving system for a building comprising:

a first reservoir positioned on the roof of the building, wherein the first reservoir includes a first heat-exchanging pipe and cooling water;

an air inlet positioned in the building for conducting air in the building into the first heat-exchanging pipe; and

an air outlet positioned in the building and connected to the first heat-exchanging pipe for conducting air cooled by the cooling water into the building.

16. The passive energy saving system for a building of Claim 15, further comprising an air purifier positioned between the air inlet and the first heat-exchanging pipe.

17. The passive energy saving system for a building of Claim 15, further comprising a solar energy collector positioned between the air inlet and the first heat-exchanging pipe.

18. The passive energy saving system for a building of Claim 17, wherein the solar energy collector comprises:

a heat-absorbing plate; and

a plurality helical coils connected to the heat-absorbing plate.

19. The passive energy saving system for a building of Claim 17, further comprising:

a hot water tank positioned between the solar energy collector and the first heat-exchanging pipe; and

a second heat-exchanging pipe positioned in the hot water tank, wherein the second heat-exchanging pipe absorbs air heat heated by the solar energy collector so as to warm up water in the hot water tank.

20. The passive energy saving system for a building of Claim 17, further comprising:

a first control valve positioned between the first reservoir and the solar energy collector;

a bypass pipeline positioned between the solar energy collector and the air outlet; and
a second control valve positioned on the bypass pipeline.